UNITED STATES PATENT AND TRADEMARK OFFICE

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10/699,486	10/31/2003	Eric Anderson	200207252-1	3149

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/699,486	ANDERSON, ERIC
Office Action Summary	Examiner	Art Unit	
	Mark A. X Radtke	2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>01 March 2007</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-24* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1 March

2007 has been entered.

Remarks

2.   In response to communications filed on 1 March 2007, claim(s) 3, is/are

cancelled and claim(s) 1, 12-14 and 19-24 is/are amended per Applicant's request.

Therefore, claims 1-2 and 4-24 are presently pending in the application, of which,

claim(s) 1, 12 and 19-24 is/are presented in independent form.

3.   It is noted that claim 1, as amended, at line 5 contains formatting that does not

conform to standard practice. The phrase "one or more portions of the" is enclosed in

single brackets. Typically, strings of five or fewer characters are enclosed in double

brackets (e.g., line 7 of claim 1) to indicate their deletion (see 37 CFR 1.121(c)(2)). For

the purposes of examination, the phrase "one or more portions of the" at line 5 of claim

1 will be given patentable weight and the brackets will be ignored, because the phrase

was not deleted from other independent claims (see, for example, claim 19). If Applicant

wishes to delete the phrase, Applicant should do so in the response to this Action using

standard "strike-through" style. In either case, it is requested that Applicant clarify

Applicant's reason for enclosing the phrase in single brackets in the 1 March 2007 filing.

It is suggested that Applicant delete the single brackets (i.e., "[[[]]one or more portions of

the[[]]]").

4.   A similar problem is noted in claims 13-14. For the purposes of examination, the

portions of those claims enclosed in brackets will be considered deleted. It is requested

that Applicant furnish an updated copy of the claims that correctly deletes the previously

presented portions of those claims (i.e., "strike-through"). Also, the language in claims

13-14, as amended, may require changes; the phrase "results [...] includes intermediate

status result" is ungrammatical. These problems make it difficult to ascertain the scope

of the amended claims.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 1-2, 4-15 and 17-24 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Verma et al. (U.S. Pat. No. 6,856,993), and further in view of Berliner

("CVS II: Parallelizing Software Development" by B. Berliner, Proceedings of the

USENIX Winter 1990 Technical Conference, available online at

http://citeseer.ist.psu.edu/berliner90cvs.html).

        As to claim 1, Verma et al. teaches a method of creating a filesystem with

transaction based functionality (see Abstract), comprising:

        receiving an indicator to initiate a transaction for files stored in one or more

portions of the filesystem (see column 10, lines 8-10, "mark the thread/process as

transacted" and column 10, lines 20-24, "copyFile");

        processing the text-based commands written to the control file (see column 2,

lines 57-59 and column 3, lines 3-6); and

        operating on the one or more portions of the pseudo-filesystem within a

transaction according to the text-based commands (see column 3, lines 3-6).

        Verma et al. does not explicitly teach duplicating the filesystem within a pseudo-

filesystem; and

        creating a control text file that provides a textual filesystem interface and receives

text-based commands to operate on the pseudo-filesystem.

        However, Berliner teaches duplicating the filesystem within a pseudo-filesystem

(see section 2.1, "The CVS Program", paragraph 2, number 3, "symbolic mapping of

names" and see section 2.3, "Location Independent Module Database"); and

creating a control text file that provides a textual filesystem interface and receives

text-based commands to operate on the pseudo-filesystem (See section 2.2, "Tracking

Third-Party Source Distributions", "**checkin** program". Berliner anticipates the use of

scripts, which are equivalent to "a control text file". Furthermore, the use of scripts to

automate certain tasks is extremely well-known in the art of Unix systems programming.

See, for example, "Running Arbitrary Scripts Under CVS" by J. Vesperman.

Furthermore, to an application, the Unix command line ("stdin") is indistinguishable from

a text file).

Therefore, it would have been obvious to one having ordinary skill in the relevant

art at the time the invention was made to have modified Verma et al. by the teaching of

Berliner because "other operating systems and/or file systems may implement and

benefit from the present invention" (see Verma et al., column 6, lines 17-19).

As to claim 2, Verma et al., as modified, teaches wherein the duplicating is

performed lazily (see column 2, lines 59-65 and column 23, "Deferred Redo

Alternative").

As to claim 4, Verma et al., as modified, teaches further comprising:

completing the transaction upon receipt of a text-based command associated

with terminating the transaction (see column 8, lines 26-28).

As to claim 5, Verma et al., as modified, teaches wherein the text-based

commands include functional equivalent commands associated with terminating the

transaction (see column 7, lines 23-26, "aborted") and selected from a set of commands

for performing one of the following functions: delete directory (see column 17, lines 3-7),

delete filesystem (see column 17, lines 3-7, "recursive delete"), and abort (see column

7, lines 23-26).

As to claim 6, Verma et al., as modified, teaches further comprising:

updating the filesystem with the updates performed on the pseudo-filesystem

when the transaction has completed (see column 8, lines 26-28).

As to claim 7, Verma et al., as modified, teaches wherein the updates are

performed upon receipt of an indication to commit the transaction (see column 8, lines

26-28).

As to claim 8, Verma et al., as modified, teaches further comprising:

creating a status text file that provides text-based status results from operations

performed on the pseudo-filesystem (see column 2, lines 57-59, "actual data write

details of the transaction").

As to claim 9, <u>Verma et al.</u>, as modified, teaches wherein the indicator to initiate the transaction results from the creation of a directory within a pseudo-filesystem (see column 27, lines 64-67).

As to claim 10, <u>Verma et al.</u>, as modified, teaches wherein the transaction ensures atomic updates to the filesystem in accordance with modifications made to the pseudo-filesystem and related files during the transaction (see column 6, lines 24-26).

As to claims 11 and 18, <u>Verma et al.</u>, as modified, teaches wherein a user assists in reconciliation of conflicts between updates in the pseudo-filesystems (See column 29, lines 37-45. Depending on when the non-transacted user releases the resource, a file handle in conflict will not be deleted, thus resolving a resource conflict).

As to claim 12, <u>Verma et al.</u> teaches a method of interfacing with a filesystem (see Abstract) comprising:

For the remaining steps of this claim applicant(s) is/are directed to the remarks and discussions made in claim 1 above.

As to claim 13, <u>Verma et al.</u>, as modified, teaches wherein the text-based status results in the status file includes intermediate status result (see column 2, lines 57-59, "actual data write details of the transaction").

As to claim 14, <u>Verma et al.</u>, as modified, teaches wherein the text-based status results in the status file includes final status results (see column 2, lines 57-59, "actual data write details of the transaction").

As to claim 15, <u>Verma et al.</u>, as modified, teaches wherein receiving a text-based command includes functional equivalent commands selected from a set including: change root directory (The "mount" command is all well-known command in NTFS. Mount points can be partitions or folders within an existing partition. See http://support.microsoft.com/?kbid=205524), select concurrency control type (See column 6, lines 56-59. Any kind of concurrency control system can be used via interfaces), select isolation level (See column 6, lines 48-51. Processes, file handles or files must be selected before they are treated as transactional operations. Disabling or enabling transactions is a selection of isolation level.), commit transaction (see column 8, lines 26-28), and abort transaction (see column 7, lines 23-26).

As to claim 17, <u>Verma et al.</u>, as modified, teaches wherein determining the one or more data dependencies includes using lock-based concurrency control (LBCC) to control pending read and write operations to the pseudo-filesystem, the filesystem and one or more corresponding files associated with the pseudo-filesystem and filesystem respectively (see column 11, line 49 – column 12, line 18).

As to claim 19, <u>Verma et al.</u> teaches a computer program product for creating a filesystem with transaction based functionality, tangibly stored on a computer-readable medium, comprising instructions operable to cause a programmable processor (see Abstract) to:

For the remaining steps of this claim applicant(s) is/are directed to the remarks and discussions made in claim 1 above.

As to claim 20, <u>Verma et al.</u> teaches a computer program product for interfacing with a filesystem, tangibly stored on a computer-readable medium, comprising instructions operable to cause a programmable processor (see Abstract) to:

For the remaining steps of this claim applicant(s) is/are directed to the remarks and discussions made in claim 1 above.

As to claim 21, <u>Verma et al.</u> teaches an apparatus that creates a filesystem with transaction based functionality (see Abstract) comprising:

a processor (see figure 1, element 21);

a memory (see figure 1, element 25) having instructions capable of being executed on the processor...

For the remaining steps of this claim applicant(s) is/are directed to the remarks and discussions made in claim 1 above.

As to claim 22, <u>Verma et al.</u> teaches an apparatus that interfaces with a

filesystem (see Abstract), comprising:

a processor (see figure 1, element 21);

a memory (see figure 1, element 25) having instructions capable of being

executed on the processor...

For the remaining steps of this claim applicant(s) is/are directed to the remarks

and discussions made in claim 1 above.

As to claim 23, <u>Verma et al.</u> teaches an apparatus for creating a filesystem with

transaction based functionality (see Abstract), comprising:

For the remaining steps of this claim applicant(s) is/are directed to the remarks

and discussions made in claim 1 above.

As to claim 24, <u>Verma et al.</u> teaches an apparatus for interfacing with a

filesystem (see Abstract), comprising:

For the remaining steps of this claim applicant(s) is/are directed to the remarks

and discussions made in claim 1 above.

7.   Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over <u>Verma</u>

<u>et al.</u>, as modified, as applied to claim 12 above, and further in view of <u>Kung et al.</u> ("On

optimistic methods for concurrency control", ACM Transactions on Database Systems

(TODS), vol. 6, issue 2, pages 213-226. Published June 1981).

As to claim 16, <u>Verma et al.</u>, as modified, still does not teach wherein

determining the one or more data dependencies includes using optimistic concurrency

control (OCC) to control pending read and write operations to the pseudo-filesystem,

the filesystem and one or more corresponding files associated with the pseudo-

filesystem and filesystem respectively.

<u>Kung et al.</u> teaches wherein determining the one or more data dependencies

includes using optimistic concurrency control (OCC) to control pending read and write

operations to the pseudo-filesystem, the filesystem and one or more corresponding files

associated with the pseudo-filesystem and filesystem respectively (see Abstract).

Therefore, it would have been obvious to one of ordinary skill in the relevant art

at the time the invention was made to have modified <u>Verma et al.</u>, as modified, by the

teaching of <u>Kung et al.</u> for the benefit of providing an external transaction service (See

<u>Verma et al.</u>, column 6, lines 59-64, where one type of transaction service, MS-DTC, is

suggested. Furthermore, Examiner notes that there are 171 citations listed on the ACM

Portal, indicating that the method is well-known in the art).

Response to Arguments

8.   Applicant's arguments filed on 1 March 2007 with respect to the rejected claims

in view of the cited references have been fully considered but are moot in view of the

new grounds for rejection.

In response to Applicant's arguments that "Verma does not describe or suggest "duplicating the filesystem within a pseudo-filesystem", the Examiner respectfully disagrees and reasserts the position argued on page 11 of the Final Action filed 1 November 2006. However, in the interest of expediting prosecution, the current rejection relies on the feature as it is taught by <u>Berliner</u>.

Additional References

9.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of art with respect to transactional file management in general:

"Running Arbitrary Scripts Under CVS" by J. Vesperman.
"Version Control with Subversion", Chapters 1-3, by B. Collins-Sussman et al.

Conclusion

10.   Any inquiry concerning this communication or earlier communications should be directed to the examiner, Mark A. Radtke. The examiner's telephone number is (571) 272-7163, and the examiner can normally be reached between 9 AM and 5 PM, Monday through Friday.

If attempts to contact the examiner are unsuccessful, the examiner's supervisor,

Jeffrey Gaffin, can be reached at (571) 272-4146.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to Customer Service at (800) 786-9199.

maxr
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13 May 2007

JEFFREY GAFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100